

# From the 'sit back and be told' culture to the 'making and doing' culture: Wikipedia and the students as science popularisers.

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This collective, observational, evaluative and multiple case study (three editions so far), shows how Wikipedia facilitates student involvement in the development of their learning — through direct authorship of succinct scientific opuscles (in short, e-learning materials), its revision and its publication as common goods in Wikipedia —, and in the improvement of the established competences for Further Mathematics, a course taught in Spanish and English in the School of Technology of the University of Extremadura, as part of the Bachelor Degrees in Computing and Computer Engineering and in Computer Software Engineering<sup>5</sup>.

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4 <https://gteavirtual.org/citee/libro-de-actas/>

5 (a) On the English Wikipedia: 1<sup>st</sup>, The university learning project: [https://en.wikipedia.org/wiki/Wikipedia:School\\_and\\_university\\_projects/Discrete\\_and\\_numerical\\_mathematics](https://en.wikipedia.org/wiki/Wikipedia:School_and_university_projects/Discrete_and_numerical_mathematics); 2<sup>nd</sup>, Participants and major contributions: [https://en.wikipedia.org/wiki/Wikipedia:School\\_and\\_university\\_projects/Discrete\\_and\\_numerical\\_mathematics/Participants\\_and\\_major\\_contributions](https://en.wikipedia.org/wiki/Wikipedia:School_and_university_projects/Discrete_and_numerical_mathematics/Participants_and_major_contributions); 3<sup>rd</sup>, The learning plan: [https://en.wikipedia.org/wiki/Wikipedia:School\\_and\\_university\\_projects/Discrete\\_and\\_numerical\\_mathematics/Learning\\_plan](https://en.wikipedia.org/wiki/Wikipedia:School_and_university_projects/Discrete_and_numerical_mathematics/Learning_plan), and 4<sup>th</sup>, Sandbox of the learning plan: [https://en.wikipedia.org/wiki/Wikipedia:School\\_and\\_university\\_projects/Discrete\\_and\\_numerical\\_mathematics/Learning\\_plan/Sandbox](https://en.wikipedia.org/wiki/Wikipedia:School_and_university_projects/Discrete_and_numerical_mathematics/Learning_plan/Sandbox). (b) On the Spanish Wikipedia: 1<sup>st</sup>, The university learning project: [https://es.wikipedia.org/wiki/Wikipedia:Proyecto\\_educativo/Matem%C3%A1tica\\_discreta\\_y\\_num%C3%A9rica](https://es.wikipedia.org/wiki/Wikipedia:Proyecto_educativo/Matem%C3%A1tica_discreta_y_num%C3%A9rica); 2<sup>nd</sup>, Participants and major contributions: [https://es.wikipedia.org/wiki/Wikipedia:Proyecto\\_educativo/Matem%C3%A1tica\\_discreta\\_y\\_num%C3%A9rica/Participantes\\_y\\_contribuciones\\_principales](https://es.wikipedia.org/wiki/Wikipedia:Proyecto_educativo/Matem%C3%A1tica_discreta_y_num%C3%A9rica/Participantes_y_contribuciones_principales); 3<sup>rd</sup>, The learning plan: [https://es.wikipedia.org/wiki/Wikipedia:Proyecto\\_educativo/Matem%C3%A1tica\\_discreta\\_y\\_num%C3%A9rica/Plan\\_de\\_aprendizaje](https://es.wikipedia.org/wiki/Wikipedia:Proyecto_educativo/Matem%C3%A1tica_discreta_y_num%C3%A9rica/Plan_de_aprendizaje), and 4<sup>th</sup>, Sandbox of the learning plan: [https://es.wikipedia.org/wiki/Wikipedia:Proyecto\\_educativo/Matem%C3%A1tica\\_discreta\\_y\\_num%C3%A9rica/Plan\\_de\\_aprendizaje/Taller](https://es.wikipedia.org/wiki/Wikipedia:Proyecto_educativo/Matem%C3%A1tica_discreta_y_num%C3%A9rica/Plan_de_aprendizaje/Taller).

Changing culture is difficult and if it comes to moving away from the 'sit back and be told' culture towards the 'making and doing' culture<sup>6</sup>, even more. It involves change and overcoming resistance to it. Individual effort and intellectual demand are indispensable ingredients, without forgetting the collective, in mutual aid. Contributing directly to Wikipedia is an ideal vehicle for finding a balance between the necessary rationality, rigour and precision, and the neutrality, naturalness and simplicity of the language destined to disseminate academic knowledge.

It is capable of bringing the best qualities of students to light, while also reinforcing various elements related to cooperative and collaborative learning, certain soft skills and occasionally some hard skills. Walking through the paths on Wikipedia, amalgamates at the same time that it favours, stimulates and strengthens the action of several learning styles in a fluid mixture.

Working together with the Wikipedia community makes it possible for us to be on the cutting edge of knowledge and techniques. In addition, we have the opportunity to deepen our understanding of applied academic disciplines, particularly in the field of Science, Technology and Society. Furthermore, taking the students charge of authorship and therefore of the transmission of information, with the documentation work (gathering and interpretation of data and information) that this entails, helps them to distinguish between a specialised or non-specialised public, as well as to differentiate the encyclopaedic point of view, which is purely informative and jealously objective, from the intersubjective or subjective point of view (an issue, however, that can be avoided by being able to elaborate and defend arguments and make judgements, on the discussion page of any article).

This activity of progressive pedagogy, mutual support and free learning is optional for the students, and although limited to some specific topics of mathematics, it provides a different and complementary practice and knowledge of the specific learning of the subject treated in the course. Building a communal good, learning in community, favouring the inclination to co-responsible participation in substantial opposition to a forced one, at all times under the freedom of disinterested sharing of knowledge, and dispelling thoughtless spontaneity, the anxiety to delegate and the desire to reach comfort through the fast track of social laziness, carefreeness and oblivion are banished.

Finally, it should be noted that several studies prove the reliability of Wikipedia, showing the effort and intellectual demand of those who contribute to it. Because of this, every day there are more of us who are utterly convinced that the fruit of collective creative work supported by free knowledge architectures is unsurpassable.

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**Note:** This brief summary is complemented by the presentation 'Wikipedia and the students as science popularisers. A collective and observational case study'<sup>11</sup>.

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6 Gauntlett, David (2011). *Making is Connecting: The social meaning of creativity, from DIY and knitting to YouTube and Web 2.0*. Cambridge, England (GB-ENG), RU: Polity Press. © CC BY-NC-SA.  
<http://www.makingisconnecting.org/gauntlett2011-extract1.pdf>

7 <http://doe.gobex.es/pdfs/doe/2019/780o/19060886.pdf>

8 <http://gitaca.unex.es/>

9 [https://ec.europa.eu/regional\\_policy/en/funding/erdf/](https://ec.europa.eu/regional_policy/en/funding/erdf/)

10 <http://www.juntaex.es/>

11 <https://archive.org/details/>

[Wikipedia.and.the.students.as.science.popularisers.A.collective.and.observational.case.study](#)